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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,209	09/25/2001	Gregory Plos	P66906US0	8500

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EXAMINER
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ELHILO, EISA B

ART UNIT	PAPER NUMBER
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1751

DATE MAILED: 07/03/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/926,209

Applicant(s)

PLOS, GREGORY

Examiner

Eisa B Elhilo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 September 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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Claims 1-37 are pending in this application.

### **DETAILED ACTION**

#### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1, is indefinite because the claim recites the limitation " A process of oxidation dyeing". It is unclear whether the process is used for dyeing keratin fibers or dyeing any other materials. The claim is independent and has no other dependent claims that further define the claim. Correction is required.

Claim 12 is indefinite because the claim recites the limitation "couplers". There is insufficient antecedent basis for this limitation in the claim.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 21 is rejected under 35 U.S.C. 102(b) as being anticipated by Ikeda (5,104,413).

Ikeda (US' 413) teaches a hair dyeing composition comprising cysteine derivatives (N-acetylcysteine), an aromatic alcohol and/or ethoxylate alcohol as medium suitable for dyeing and a dye compound (see abstract and col. 7, Example 3). Ikeda teaches all the limitations of the claim. Hence, Ikeda anticipates the claim.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4, 10-15, 19-27, 30-35 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunz et al. (US 6,106,579) in view of Ikeda (US 5,104,413).

Kunz (US' 579) teaches a process for dyeing human hair as claimed in claim 27 (see col. 1, lines 8-14). The process comprises applying to the hair a dyeing composition that formed by mixing the oxidation dye precursor compounds with the oxidizing agent and allowed the dyeing composition to act on the hair for 5 to 60 minutes, preferably 15 to 30 minutes, as a temperature of from 20 to 50<sup>0</sup> C as claimed in claims 2, 23-25, 27 and 32-33 (see col. 9, lines 60-67). The dyeing composition comprises a dye carrier (medium suitable for dying), laccase enzyme as an oxidizing agent (see col. 8, line 38), 1,4-diaminobenzene (p-phenylenediamine) as an oxidation dye precursor as claimed in claim 10 (see col. 2, lines 48-49), Aromatic m-diamine and m-aminophenols as couplers as claimed in claims 12 and 37 (see col. 3, line 8), and/or their salts (see col. 3, line 59), wherein both oxidation dye precursor and couplers are contained in the dye carrier in an amount of about 0.01 to 10 % by weight which fall within the claimed ranges as claimed in claims 11 and 13 (see col. 3, lines 60-63), direct dyes as claimed in claim 15 (see col. 3, line 65-66), anionic, cationic or nonionic surface-active substances (surfactants) as adjuvants as claimed in claim 19 (see col. 9, lines 19-20). The dyeing composition has a pH in the range of 3 to 11 or from 5 to 9 wherein the ranges fall within the claimed ranges as claimed in claims 20,

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30 and 31 (see col. 9, lines 41-43). Kunz further, teaches a multi-part kit for oxidative dyeing as claimed in claims 26 and 34 (see col. 2, lines 34-43). With regards to claims 14 and 35, Kunz teaches a dyeing composition that comprises oxidation dye precursors and/or their salts (see col. 3, line 5), alkalizing agents such as alkali hydroxides and acids such as lactic, acetic, tartaric, hydrochloric, and citric acids (see col. 9, lines 50-54) which implies that the salts of these acids are also present in the dyeing composition and therefore, it obvious to one having ordinary skill in the art at the time of the invention to be motivated to modify the primary reference of Kunz to incorporate the addition salts of hydrochlorides, tartrates, lactates and acetates in the dyeing composition with a reasonable expectation of success because the primary reference teaches the acids of these salts in the dyeing composition and, thus, a person of the ordinary skill in the art would expect such a composition to have similar properties to those claimed, absent unexpected results.

The instant claims differ from the reference by reciting a process for dyeing keratin fibers comprising applying to the keratin fibers a dyeing composition that comprises N-acetylcysteine as a reducing agent. The reference also, fails to teach the N- acetylcysteine component in the claimed amounts as claimed in claims 3 and 4.

However, the reference of Kunz (US' 579) teaches a process for treating hair comprising applying to the hair a composition that comprises N-acetylcysteine component as claimed (see col. 10, line 39).

Ikeda (US' 413) teaches in analogous art a hair dyeing composition comprising N-acetylcysteine component in the amount of 0.2% which falls within the claimed percentages as claimed in claim 3 and 4 (see col. 7, example 3).

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Therefore, in view of the teaching of the secondary reference, one having ordinary skill in the art would have been motivated to modify the primary reference by incorporating N-acetylcysteine to make such a composition with reasonable expectation of success. Such modification would be obvious because the primary reference teaches that N-acetylcysteine component can be used in a hair treating composition (see col. 10, line 39) and Ikeda as a secondary reference teaches clearly that a hair dyeing composition comprising a specific cysteine derivative with a dye component shows extremely improved dyeing properties and shampoo-fastness (see col. 1, lines 45-51), and, thus, a person of the ordinary skill in the art would be motivated to use the N-acetylcysteine component in the dyeing composition to improve the dyeing properties of the composition, absent, unexpected results.

Claims 5-9 and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunz et al. (US 6,106,579) in view of Ikeda (US 5,104,413) and further, in view of Aaslyng (WO 97/19999).

The disclosures of Kunz (US' 579) and (US' Ikeda (413) are summarized above. The references fail to teach the origin of the laccase enzymes as recited in claims 5-8 or the amount of the enzyme as recited in claims 9, 28 and 29.

However, the primary reference of Kunz teaches clearly that laccase enzymes are used as oxidizing agents in the hair dyeing composition (see col. 8, line 38).

Aaslyng (WO' 999) teaches in another analogous art a hair dyeing composition comprising laccase enzyme derived from fungal or bacteria origin as claimed in claim 5 (see page 6, lines 31-33), laccase enzyme derived from plant such as Japanese varnish tree *Rhus vericifera* as claimed in claim 6 (see page 6, lines 27-28), laccase enzyme derived from

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*Myceliophthora thermophila* as claimed in claim 8 (see page 8, line 12). Aaslyng also teaches that the laccase enzyme is used in the dyeing composition in the amount of 10 Lacu/mL and 1 Lacu/mL, which are similar to the claimed amounts as recited in claims 9, 28 and 29 (see page 16, lines 36-37 and page 17, lines 1-2).

Therefore, in view of teaching of the secondary reference one having ordinary skill in the art at the time of the invention would have been motivated to modify the primary reference of Kunz by incorporating laccase enzymes that derived from different sources as taught by Aaslyng to make such a composition with a reasonable expectation of success because the primary reference suggests the use of laccases as oxidizing agents (see col. 8 line 38) which implies that more types of laccases are used in the dyeing composition, and Aaslyng as a secondary reference teaches dyeing composition comprising laccases that derived from different sources (see page 6-8), and, thus, the person of ordinary skill in the art would be motivated to use any laccase species in the dyeing composition with a reasonable expectation that the laccases will have similar properties no matter from which generic source these enzymes are derived or generated, absent, unexpected result.

With regards to claim 7, it would have been obvious to one having ordinary skill in the art at the time of invention to make such a composition by using laccases that derived from different plants because the reference teaches a dyeing composition comprising laccase enzymes that derived from Japanese varnish tree (plant) (see page 6, line 28), and, thus, a person of the ordinary skill in the art would be motivated to use any laccase species that derived from different plants includes those recited in the claims with a reasonable expectation that laccases will have

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similar properties no matter from which plant these enzymes are derived or generated, absent, unexpected results.

Claims 16-18 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunz et al. (US 6,106,579) in view of Ikeda (US 5,104,413) and further, in view of Cotteret et al. (US 5,735,908).

The disclosures of Kunz (US' 579) and (US' Ikeda (413) are summarized above. The references fail to teach a dyeing composition comprising at least one cationic or amphoteric substantive polymer as claimed in claim 16, wherein the polymer consists of repeating units corresponding to the formulae (IV) and (V) as claimed in claims 17 and 18. Further, the references fail to teach a silicone compound as claimed in claim 36.

However, Kunz (US' 579) teaches a dyeing composition comprising alkyl ammonium salts (see col. 9, line 22). Further, Ikeda (US' 413) teaches a dyeing composition comprising a cationic polymer (see col. 6, Example 2 line 5). The primary reference (US' 579) also teaches a dyeing composition comprising hair conditioners (see col. 9, line 28).

Cotteret (US' 908) in other analogous art of hair dyeing composition, teaches a composition comprising quaternary polyammonium polymers consisting of repeating units corresponding to the formula (II) which is identical to the claimed formula (IV) (see col. 4, formula II) and a polymer consisting of repeating units corresponding to the formula (III) which is a higher analog to the claimed formula (V), when in the reference formula one ethyl group is attached to the nitrogen atom (see col. 4, formula III) and silicone as a hair conditioner (see col. 3, line 58).



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Therefore, in view of teaching of the secondary reference, one having ordinary skill in the art at the time of the invention would be motivated to modify the composition of the primary reference of Kunz by incorporating the quaternary polyammonium polymers and silicone compound as taught by Cotteret to make such a composition with a reasonable expectation of success because the primary reference of Kunz teaches and suggests the use of ammonium salts and hair conditioners in the dyeing composition (see col. 9, lines 22 and 28) and Cotteret as secondary reference teaches clearly that the use of substantive polymer (quaternary polyammonium polymer) in the hair dyeing composition provides much more uniform coloration than a dyeing composition that not contains substantive polymers (see col. 7 and 8, the comparative data), and, thus, a person of the ordinary skill in the art would be motivated to use silicone component as a conditioner agent and to use the substantive polymers in the dyeing composition for better uniform coloration, absent, unexpected results.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eisa B Elhilo whose telephone number is (703) 305-0217. The examiner can normally be reached on M - F (7:30-5:00) with alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on (703) 308-4708. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

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A handwritten signature in black ink, appearing to read 'Eisa Elhilo', written in a cursive style.

Eisa Elhilo  
Examiner Art Unit 1751

June 28, 2003